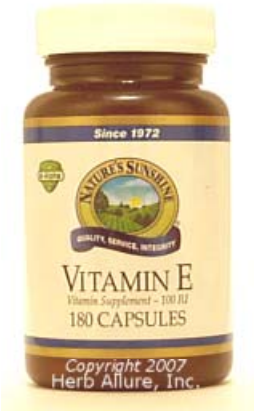

Vitamin E

Stock #1650-6 (180 capsules)

For decades, vitamin E has been regarded as one of the most popular single-ingredient dietary supplements. Ongoing research has substantiated vitamin E's potent antioxidative ability to treat chronic and degenerative diseases such as cardiovascular disease and cancer. Several observational surveys have linked populations with a large intake of vitamin E with reduced incidence of cardiovascular disease. Studies have also found that men and women with high intakes of vitamin E have less coronary artery disease—a chronic disease in which the coronary arteries are hardened and narrowed (atherosclerosis). In addition, vitamin E supplementation has been associated with a significant reduction in myocardial infarction (heart attack). Results from the 1996 Cambridge Heart Antioxidant Study (CHAOS) showed that natural vitamin E (400 to 800 IU daily) reduced the risk of nonfatal heart attacks by 77% in patients with coronary atherosclerosis. Likewise, a large double-blind, placebo-controlled, randomized trial found that patients with kidney disease, who also had pre-existing cardiovascular disease, had a 70% reduction in nonfatal heart attacks while taking natural vitamin E (800 IU daily).[1-6]

There is also evidence to suggest that individuals with higher serum vitamin E levels, as well as those taking vitamin E supplements, have a decreased risk of some cancers, including gastrointestinal, lung, oral/esophageal and stomach cancer. In addition, randomized clinical trials have demonstrated protective effects of vitamin E against prostate cancer. Furthermore, vitamin E has been shown to reduce the side effects of chemotherapy. Supplementation with vitamin E among patients on cisplatin chemotherapy has been shown to significantly lower the incidence and severity of peripheral neurotoxicity—toxicity to nervous tissue including both the brain and peripheral nerves—compared to patients who were not supplemented with vitamin E. Neurotoxicity is a common side effect of cisplatin therapy.[7-13]

Recent findings indicate that vitamin E has a much broader array of biological activities than originally determined. Along with its established role as an antioxidant, it is becoming evident that vitamin E can also suppress local and chronic inflammation; improve insulin sensitivity in type 2 diabetes, nondiabetics and hypertensives (individuals with high blood pressure); and enhance immune function. Vitamin E is actually present in higher concentrations in immune cells than in any other cells of the body. Studies show that people with lower serum levels of vitamin E are significantly more susceptible to infection than those with higher levels. However, supplemental vitamin E has been found to improve immune responses in both sick and healthy individuals.[8,9,14-18]

Vitamin E has also shown promise in treating preeclampsia—a complication of pregnancy involving hypertension (high blood pressure) and edema, which is a major cause of both maternal and fetal-neonatal morbidity (a diseased condition) and mortality (death). Two different studies by researchers in India found significantly lower blood levels of vitamin E (as well as vitamin C) in preeclamptic women as compared to normotensive pregnant and non-pregnant women.[1,19,20]

Furthermore, several human studies have found that low levels of vitamin E intake are associated with increased risk for cataract development. One study found that the risk of nuclear opacification—clouding of the ocular (eye) lens, which is associated closely with the development of cataracts—among regular users of vitamin E supplements and individuals with higher plasma levels of vitamin E was reduced by approximately half.[8,21-24]

Historically, experts theorized that vitamin E would increase the effects of warfarin (Coumadin) by causing a deficiency of vitamin K—a fat-soluble vitamin responsible for blood clotting. However, in a recent double-blind clinical trial of 21 patients on chronic warfarin therapy, no significant effect on prothrombin times (a test that measures the clotting time of blood) was observed when 800-1200mg of vitamin E per day was given. Researchers concluded that "it appears that vitamin E can safely be given to patients who require chronic warfarin therapy."[8,25,26]

Natural vitamin E (*d*-alpha-tocopherol) has a higher bioavailability than synthetic vitamin E (*dl*-alpha-tocopherol). In one study, Japanese researchers found that it took 300mg of synthetic vitamin E to equal the blood levels achieved in healthy subjects by a 100mg dose of natural vitamin E. Furthermore, researchers at Oregon State University found that the human body excretes synthetic vitamin E three times faster than natural vitamin E. Natural forms of vitamin E are extracted from wheat germ oil, soybeans and other vitamin E food sources, unlike synthetic forms, which are extracted from petroleum oils. Furthermore, since vitamin E is fat soluble, supplements may be better-absorbed when taken with food.[8,27-30]

Each capsule of NSP's Vitamin E provides 100 IU natural vitamin E.

References:

[1]Gailing CN, S. "Vitamin E 2000." *Nutrition Science News*; March 2001.
[2]Dutta, A. & Dutta, S.K. "Vitamin E and its role in the prevention of atherosclerosis and carcinogenesis: a review." *Journal of the American College of Nutrition*; 2003, 22(4):258-268.

[3]Yusoff, K. "Vitamin E in cardiovascular disease: has the die been cast?“ *Asia Pacific Journal of Clinical Nutrition*; 2002, 11 Suppl 7:S443-447.

[4]Stephens, N.G., et al. "Randomized controlled trial of vitamin E in patients with coronary disease: Cambridge heart antioxidant study (CHAOS).“ *Lancet*; 1996, 347:781-786.

[5]Challem, J. "Vitamin E Prevents.“ *Nutrition Science News*; November 2001.

[6]Jialal, I., et. al. "Is there a vitamin E paradox?“ *Current Opinion in Lipidology*; 2001, 12(1):49-53.

[7]Sung, L., et. al. "Vitamin E: the evidence for multiple roles in cancer.“ *Nutrition and Cancer*; 2003, 46(1):1-14.

[8]Ford-Martin, P. "Vitamin E.“ *Gale Encyclopedia of Alternative Medicine.*<http://www.findarticles.com/cf_dls/g2603/0007/2603000729/p1/article.jhtml>. Accessed April 2004.

[9]Janson MD, M. "A Supplement Plan for Seniors.“ *Nutrition Science News*; December 1999.

[10]Patterson, R.E., et. al. "Vitamin supplements and cancer risk: the epidemiologic evidence.“ *Cancer Causes & Control*; 1997, 8(5):786-802.

[11]Klein, E.A., et. al. "SELECT: the selenium and vitamin E cancer prevention trial.“ *Urologic Oncology*; 2003, 21(1):59-65.

[12]Pace, A., et al. "Neuroprotective effect of vitamin E supplementation in patients treated with cisplatin chemotherapy.“ *Journal of Clinical Oncology*; 2003, 21:927-931.

[13]Gaby, A.R. "Vitamin E prevents chemotherapy side effect.“ *Townsend Letter for Doctors and Patients*; August-September 2003.

[14]Bron, D. & Asmis, R. "Vitamin E and the prevention of atherosclerosis.“ *International Journal for Vitamin and Nutrition Research*; 2001, 71(1):18-24.

[15]Patrick ND, L. "Nonalcoholic Fatty Liver Disease: Relationship to Insulin Sensitivity and Oxidative Stress. Treatment Approaches Using Vitamin E, Magnesium, and Betaine.“ *Alternative Medicine Review*; 2002, 7(4):276-291.

[16]Barbagallo, M., et. al. "Effects of vitamin E and glutathione on glucose metabolism: role of magnesium.“ *Hypertension*; 1999, 34(4 Pt 2):1002-1006.

[17]Paolisso, G., et. al. "Pharmacologic doses of vitamin E improve insulin action in healthy subjects and non-insulin-dependent diabetic patients.“ *American Journal of Clinical Nutrition*; 1993, 57(5):650-656.

[18]Wolfson ND, D. "A Shield of Immunity.“ *Nutrition Science News*; September 1999.

[19]Jain, S.K. & Wise, R. "Relationship between elevated lipid peroxides, vitamin E deficiency and hypertension in preeclampsia.“ *Molecular and Cellular Biochemistry*; 1995, 151(1):33-38.

[20]Rayman, M.P., et. al. "Low selenium status is associated with the occurrence of the pregnancy disease preeclampsia in women from the United Kingdom.“ *American Journal of Obstetrics and Gynecology*; 2003, 189(5):1343-1349.

[21]Lyle, B.J., et. al. "Serum carotenoids and tocopherols and incidence of age-related nuclear cataract.“ *American Journal of Clinical Nutrition*; 1999, 69(2):272-277.

[22]Head ND, K. "Natural Therapies for Ocular Disorders Part Two: Cataracts and Glaucoma." *Alternative Medicine Review*; 2001, 6(2):141-166.

[23]Leske, M.C., et. al. "Biochemical factors in the lens opacities. Case-control study. The Lens Opacities Case-Control Study Group.“ *Archives of Ophthalmology*; 1995, 113:1113-1119.

[24]—. "Antioxidant vitamins and nuclear opacities: the longitudinal study of cataract.“ *Ophthalmology*; 1998, 105:831-836.

[25]Swain, R.A. & Kaplan-Machlis, B. "Therapeutic uses of vitamin E in prevention of atherosclerosis.“ *Alternative Medicine Review*; 1999, 4(6):414-423.

[26]Kim, J.M. & White, R.H. "Effect of vitamin E on the anticoagulant response to warfarin.“ *American Journal of Cardiology*; 1996, 77(7):545-546.

[27]Jones, M. "Vitamin E: The Natural Alternative.“ *Functional Foods & Nutraceuticals*; November-December 2001.

[28]Kiyose, C., et al. "Biodiscrimination of a-tocopherol stereoisomers in humans after oral administration.“ *American Journal of Clinical Nutrition*; 1997, 65:785-789.

[29]Traber, M.G., et al. "Synthetic as compared with natural vitamin E is preferentially excreted as a-CEHC in human urine: studies using deuterated a-tocopheryl acetate." *FEBS Letters*; 1998, 437:145-148.

[30]Challem, J. "Natural vs. Synthetic Vitamin E.“ *Nutrition Science News*; November 2001.